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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,553	05/26/2006	Daisuke Murakami	050388-0046	5981

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MCDERMOTT WILL & EMERY LLP
600 13TH STREET, N.W.
WASHINGTON, DC 20005-3096

EXAMINER

ADDISU, SARA

ART UNIT	PAPER NUMBER
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3724

MAIL DATE	DELIVERY MODE
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08/18/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,553	Applicant(s) MURAKAMI ET AL.	
	Examiner SARA ADDISU	Art Unit 3724	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/1/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is in response to the amendment filed 4/30/08. Currently, claims 13-25 are pending in this application.

Claim Objections

Claim 21 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 21 recites the same limitation as claim 13 (last 2 lines) therefore, Examiner believes claim 21 does not further limits claim 13.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 13-15, 17-24 are rejected under 35 U.S.C. 102(b) as being anticipated by New (USP 4,061,438).

Regarding claims 13 and 14, New teaches a vibration suppressing cutting tool comprising a holder having a shank (1) formed with a pocket (7: sleeve is considered to be part of the shaft) in which a vibration suppressing piece (10) which is not coupled to

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said holder is received so as not to be able to come off said pocket ('438, figure 1). New also teaches pocket (7) having inner walls : end walls (8: flat surface) and side wall (9: cylindrical surface) wherein at least portions of the inner wall (i.e. end wall, 8) of said pocket that knock against said vibration suppressing piece (10) or portions of the surface of said vibration suppressing piece (i.e. the diameter portion/ the part facing wall 8, which is flat) that knock against said inner wall (8) of said pocket are flat surfaces ('438, col. 3, lines 15-18). Furthermore, New teaches clearance between the vibration suppressing piece (10) and wall surfaces (8,10), therefore said vibration suppressing piece (10) knocks against the wall surfaces wall when the holder vibrates during cutting ('438, col. 3, lines 24-33). Furthermore, regarding claim s13 and 21, New teaches the tool being an overhung boring bar for machining bores of non-uniform diameter along their length, therefore, the cutting tool is expected to generate vibrations causing displacement in the horizontal direction (arrow X below) during machining, whereby the vibration direction (X) is substantially perpendicular to the first and second flat inner wall surfaces (X1, X2) ('438, col. 1, lines 5-8) (note: this concept is also evidenced by Muller et al., USP 3,663,116, col. 1, lines 22-25). New also discloses although chatter is a resonance phenomenon, the frequency of chatter vibrations is not solely dependent on characteristics of the boring bar, but on several other factors as well, such as the cutting conditions and the material of the workpiece ('438, col. 6, lines 52-61). Also note that the instant application states that " ...The first and second inner wall surfaces of the pocket and thus the flat surfaces of the vibration suppressing piece are arranged so as to extend perpendicular to the direction of vibrations of the holder expected to be

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produced during cutting” (page 5, 2nd paragraph). Regarding claim 15, New teaches said pocket having first and second flat inner wall surfaces (X1, X2: see figure below) opposed to each other, and wherein said vibration suppressing piece (10) has third and fourth flat surfaces (Y1, Y2: see figure below) and is received in said pocket such that said third and fourth surfaces face said first and second surfaces, respectively, with a clearance defined between said first and second surfaces and said vibration suppressing piece, said first, second, third and fourth surfaces being oriented so as to cross the direction in which said holder vibrates during cutting. Regarding claim 17, New teaches clearance of 0.10 to 0.13 mm and although the actual choice of length and diameter of the damper mass is not critical, the best results are attained with a clearance in the range 0.107 to 0.122 mm (which reads on the claimed limitation 0.01-0.5 mm) (‘438, col. 3, lines 23-30). Regarding claim 22, New teaches a cutting tool having a damper assembly consisting of a closed cavity in the bar in which is located a damper mass having a damping clearance around it, and forward of the cutting tool a second damper assembly which also consists of a closed cavity containing a damper mass surrounded by a damping clearance (‘438, figure 3 and col. 4, lines 29-38). Regarding claims 18 and 19, New teaches in figures 1 and 2, said pocket having a width that is 20-100% of the diameter of the shank, a height of 5-70% of the height of the shank and an axial length of 50-250% of the diameter/height of the shank. Furthermore, New teaches the actual choice of length and diameter of the damper mass is not critical (‘483, col. 1, lines 27-29). Regarding claim 20, New teaches the shank being made of cylindrical steel tube (2) while the vibration suppressing piece (10) is

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 16 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over New (USP 4,061,438).

New teaches a vibration suppressing cutting tool comprising a holder having a shank (1) formed with a pocket (7: having inner walls: end walls (8) and side wall (9)) in which a vibration suppressing piece (10) which is not coupled to said holder is received, as set forth in the above rejection. Regarding claim 16, New discloses all of the claimed limitations (i.e. pocket and vibration suppressing piece having flat surfaces that are perpendicular to the central axis of the shank wherein the opposed inner wall surfaces X1, X2 of said pocket having a greater area than other surfaces Y1, Y2, of said vibration suppressing piece: see figure above) except for the sections being rectangular). It would have been an obvious matter of design choice to make the different portions of the vibration suppressing piece of whatever form or shape was desired or expedient to fit the bore/pocket it is received in. A change in form or shape is generally recognized as being within the level of ordinary skill in the art, absent any showing of unexpected results. Regarding claim 25, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the shank and the head separate pieces, because it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art.

Response to Arguments

Applicant's arguments with respect to claims 13-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sara Addisu at (571) 272-6082. The examiner can normally be reached on 8:30 am - 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on (571) 272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Sara Addisu
(571) 272-6082
8/11/08

/Boyer D. Ashley/

Supervisory Patent Examiner, Art Unit 3724